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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------------|
| 10/743,142 | 12/23/2003 | Per H. Hammarlund | 2207/17413 | 7461 |
| 23838 | 7590 | 01/09/2008 | | |
| KENYON & KENYON LLP 1500 K STREET N.W. SUITE 700 WASHINGTON, DC 20005 | | | EXAMINER PEUGH, BRIAN R | |
| | | | ART UNIT 2187 | PAPER NUMBER |
| | | | MAIL DATE 01/09/2008 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/743,142

Applicant(s)

HAMMARLUND ET AL.

Examiner

Brian R. Peugh

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-11,13-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

This Office Action is in response to applicant's communication filed October 31, 2007 in response to PTO Office Action dated October 10, 2007. The applicant's remarks and amendment to the specification and/or claims were considered with the results that follow.

Claims 1, 3-11, and 13-18 have been presented for examination in this application. Claims 1, 5, 10, 13, and 16 have been amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-11, and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Favor (US# 6,732,236) in view of Frederick, Jr. et al. (US# 6,336,168).

As per claims 1, 3, and 4, Favor discloses a method comprising: executing a first instruction in a processor; if the execution of the first instruction generates a cache miss, associating the first instruction with the cache miss; enqueueing the first instruction

for re-execution;... and after the cache miss with which the first instruction is associated is serviced, re-executing the first instruction, the method further comprising associating the cache miss with a second instruction dependent on the first instruction, assigning an identifier to the cache miss and determining a priority of the instruction **[an access request involved in a cache miss, storing the cache miss in a retry queue while the cache fill is pending, detecting the return of the cache fill and inserting the access request associated with the cache miss for processing (column 1, lines 53-59); in the case of cache miss, the access request is transmitted to retrieve the requested data back to the cache (column 2, lines 32-35); if the address lookup determines that no matching is found indicating a cache miss, then the address lookup forward a cache fill request to the cache request queue (column 3, lines 23-26); the address tag is a seven bits and identifies the retry request queue (RRQ) entry with its associated cache line (column 4, lines 6-14); RRQ control logic compares the seven bit address tag to the entries located in the RRQ and changes the retry bit from ineligible to eligible for matching entries so the eligible retry can be inserted into arbitration module (column 4, lines 40-60)].**

The difference between the claimed subject matter and that of Favor is that Claim 1 recites enqueueing the second instruction for execution and executing the second instruction. Frederick, Jr. et al.. teaches merging multiple miss transactions together, in that a second instruction dependent on a first instruction [a second load instruction is associated with the first load instruction that has missed previously], the second instruction is enqueued [via the merging of the second instruction with the first

instruction], and executed when the data needed for the first and second instructions is available [abs.; col. 4, line 34 – col. 5, line 35].

Therefore it would have been obvious to one of ordinary skill in the art having the teachings of Favor and Frederick, Jr. et al. before them at the time of the invention to modify the system of Favor to include the miss merging of Frederick, Jr. et al., because then a performance advantage related to the time required for data availability may be gained [col. 5, lines 45-50].

As per claims 5-11 and 13-18, claims 5-11 and 13-18 encompass the same scope of the invention as those of claims 1, 3, and 4 in addition of a processor and a system having means for performing the method of claims 1, 3, and 4. Therefore, claims 5-11 and 13-18 are rejected for the same reasons as stated above with respect to claims 1, 3, and 4.

Response to Arguments

3. Applicant's arguments with respect to claims 1, 3-11, and 13-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

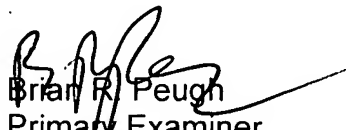
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Peugh whose telephone number is (571) 272-

4199. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Friday's from 7:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks, can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Brian R. Peugh
Primary Examiner
Art Unit 2187
January 7, 2008